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Taking aims seriously—how legal ecology affects judicial decision-making

This article reflects upon key challenges that ecology as a field of science has brought to modern environmental law as it operates within civil law systems. An example from European water management regulation elucidates how the traditional perception of judicial decision-making as deductive reasoning does not match the current reality because factual and normative premises are no longer as distinct as presumed. A novel way of formulating judicial decisions is accordingly presented: legal ecology—which aims to provide one answer to the search for more mature environmental methodologies. Legal ecology is based on the writings of the late Ronald Dworkin and especially of Robert Alexy, whose concept of principles as optimisation requirements is adapted to fulfill the execution of the aim-setting sections frequently used in environmental regulation. Adjudication with legal ecology is understood to be rooted in normative sources but to be more transparent, open to scrutiny and to invite more evolved argumentative development than is currently the practise in civil law environmental adjudication. As such, the suggested approach might also benefit argumentation in the sphere of human rights and the environment in general—or any other field where aims ought to be balanced or value choice made visibile without compromising the requirements of legal certainty.

Keywords: Methodology of environmental law, judicial decision-making, water management, legal theory, principles, rights, rules

1 INTRODUCTION: RAIDERS OF THE LOST METHOD

Environmental law as a distinct field of law has existed for decades now, but the truth about the adolescent nature of the discipline has been more or less widely known—especially since a few years ago the issue was raised by respected scholars in the field.[1] In the most recent analysis, the reasons behind the immature nature of environmental law were skillfully laid out, and the means to achieving greater maturity were identified as being the need to face up to the challenges of methodology.[2]

Methodology in science involves answering the question 'How?'—how the results are reached. Methodology is always entwined with a research theme and a

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[1] Elizabeth Fisher and others, 'Maturity and Methodology: Starting a Debate about Environmental Law Scholarship' (2009) 21(2) Journal of Environmental Law 213, cf. David M. Driesen, 'Thirty Years of International Environmental Law: A Retrospective and Plea for Reinvigoration' (2003) 30(2) Syracuse Journal of International Law and Commerce 353, and see Dan Tarlock, 'Is There a There There in Environmental Law?' (2004) 19(2) Journal of Land Use and Environmental Law 213.

[2] Ibid Fisher et al, 'Maturity and Methodology' 226–43.

hypothesis preceding the research.[3] Accordingly, tackling methodological challenges in a stand alone fashion in a project-independent article is something of an impossible task. Despite this, the task must be attempted and its challenge can be eased by carefully setting the scene in which the methodological approach under examination in this article has evolved and by laying out the instances to which it can be applied.

The motivation for framing legal ecology as presented in this article mainly derives from two previously noted challenges of environmental law: the interdisciplinarity of the field and its general lack of engagement with legal theory.[4] Here, interdisciplinarity means the challenges that ecology presents for environmental law—how ecological knowledge is currently used in existing regulation and what challenges this deployment of knowledge poses. The example used in the discussion that follows is taken from EU law: the implementation and interpretation of the Water Framework Directive. The fundamental research question animating the present enquiry is: *how could the aims written in law be fully reflected at the point of application?* Such aims, typically contained in the first paragraphs of statutes, formulate the intentions of the legislative body and state the goals they had

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[3] The theoretical framework does not (necessarily) equate with the methodology chosen for the study; research can raise even highly theoretical questions as to its theme and still be vague as to its methodological commitments.

[4] Fisher et al, 'Maturity and Methodology' (n 1) 231–35 and 246–47, even though for the authors the latter is more of a suggestion for action than an identified challenge.

in mind, are currently all too soon overlooked.[5] To answer this question is to answer the question of how the values motivating environmental regulation could be taken into consideration when the regulation is applied—such motivating values being mainly concerned with such matters as preserving nature, increasing ecological sustainability and so forth. [6]

2 LEGAL ECOLOGY: JUST REINVENTING THE WHEEL?

The aim of the present article is to join the contemporary discussion by presenting a conception of legal ecology as a methodological choice for environmental law. Legal ecology offers a way to achieve full adherence to the existing but to some extent neglected first sections of statutes—addressing how the aims in them can be balanced with other, even competing aims. It is suggested that weighing and balancing can be conducted formally, in a manner familiar from the application of fixed rules, which transparency and open-endedness of reasoning might enhance. Also, the structure suggested here might be put into practice elsewhere—where, for

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[5] The practise of the Supreme Administrative Court of Finland is an illustrative example of how rarely a court of a civil law country is willing to implement those first paragraphs of environmental statutes that include specified aims: see text at n 54-5.

[6] The challenges investigated and the answers given are examined in the civil law context. Whether the results can be used in the common law system is a separate question and not pursued here.

example, collision of different right-based objectives occurs. The final section of the article offers reasons why the approach could also be seen as a normatively binding tool for interpretation in judicial decision-making in general and not only as a methodological choice for environmental law scholars.

2.1 Point of departure: *rättsekologi*

What is legal ecology? The point of departure for the approach can be found in the work of Staffan Westerlund. In Westerlund's analysis of the discipline of environmental law he concludes that something called *rättsekologi* ('law's ecology', 'the ecological evaluation of law' or 'legal ecology'—to use the preferred translation of the term in the present article) should be used to fulfill the expectations set for environmental law. Westerlund claims that the empirical lack of ecological sustainability should be taken into the discipline of law itself instead of being seen as something non-legal, something outside the sphere of law, while with regard to the longing for maturity in environmental law, Westerlund asserts that solving genuine problems is what separates mature sciences from immature ones.[7]

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[7] Staffan Westerlund, 'Rätt och riktigt rättveteskap' 2010 Nordic Environmental Law Journal 2010:1 <http://www.nordiskmiljoratt.se/> accessed 18 February 2014 3, 11, 18. In the article Westerlund goes through the problems environmental law has had as a discipline, similarly as Fisher et al. in the above-mentioned article (Fisher et al, 'Maturity and Methodology' (n 1)). Naturally Westerlund is not alone in his desire for

Westerlund claims that in states functioning under the rule of law, legal problems are inherently bound up with ecological ones. This entanglement causes a legal *and* ecological dilemma—and in order for legal science to be proactive, the joint problem must be solved.[8] The problem can only be resolved by tackling the methodological problem—by re-setting the theoretical aspects of the field of law anew. Since the old paradigm of positivism does not meet the challenge, *rättsekologi* is constructed as an answer.[9]

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a better relationship between sustainability and law – for an overview of the concept, see Klaus Bosselmann, *The Principle of Sustainability: Transforming Law and Governance* (Ashgate, Aldershot 2008), Hans Christian Bugge and Christina Voigt, *Sustainable development in international and national law: what did the Brundtland report do to legal thinking and legal development, and where can we go from here?* (The Avosetta series; 8, Europa Law Publishing 2008) or Alan Boyle and David Freestone (eds), *International Law and Sustainable Development: Past Achievements and Future Challenges* (Oxford University Press 1999). A somewhat critical approach to the use of the concept is presented by Vaughan Lowe, 'Sustainable Development and Unsustainable Arguments' in Boyle & Freestone eds.

[8] Westerlund, 'Rätt och riktigt rättveteskap' (n 7) 18.

[9] Westerlund, 'Rätt och riktigt rättveteskap' (n 7) 3, 20, 22. For other reactions to the disappointment of positivism cf. Bebhinn Donnelly and Patrick Bishop, 'Natural Law and Ecocentrism' (2007) 19(1) Journal of Environmental Law, Jonathan I. Charney, 'Universal International Law' (1993) 87(4) The American Journal of International

As Westerlund puts it,

> [e]very legal scholar, and also other scholars, who aim[s] to tackle the problem of insufficient ecological sustainability must accept that it is these questions that *define the paradigm*—or else it goes all wrong.[10]

In other words, the problem the legal action aims to address is not seen as the *target*: the problem is *integral* to the framing of the legal question. Having elaborated on *rättsekologi*'s roots, Westerlund proceeds to give examples of what would change if eco-sustainability were to define the paradigm of law. In his view, it would bring a feedback system to the law itself, a systemic resilience familiar from elements of

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Law or David Delaney, *Law and nature* (Cambridge Studies in Law and Society, Cambridge University Press 2003).

[10] Westerlund, 'Rätt och riktigt rättveteskap' (n 7) 3, 22. The citation is translated from Swedish and emphasis added by the author. For Westerlund, 'paradigm' seems to mean an attitude or viewpoint; a background against which legal problems are conceptualized. He promulgates a Kuhnian paradigmatic change. The focus is on which kind of questions should be asked and how the results should be interpreted. Elsewhere Westerlund refers to (eco-)sustainable development as 'the ultimate prerequisite', Staffan Westerlund, 'Sustainable Balancing' in Pekka Vihervuori, Kari Kuusiniemi and Jari Siltala (eds), *Juhlajulkaisu Erkki J. Hollo 1940-28/11-2000* (Lakimiesliiton kustannus 2000).

biodiversity.[11] Westerlund sees the change as being absolutely necessary if the challenges presented by lack of sustainability are to be met.[12]

Here the concept of *rättsekologi* is taken as a point of departure, but its further development is based on a pragmatic question: *what would be the best means of achieving the result?* A practical solution to the dilemma is presented, addressing how these rudimentary challenges might be met without hampering the needs of legal certainty and sound adjudication. On the principle of Occam's razor, the attempt to reach the goal is made with as few changes to existing practice as is possible. Therefore, in what follows, legal ecology is presented as one plausible and appropriate approach.

2.2 Ecological knowledge in judicial decision-making

When mapping the ground for legal ecology the first task is to take a look at the less familiar part of the combination: ecology, the science of relations between organisms occuring in ecosystems.[13] What is important to bear in mind when using ecology for

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[11] Staffan Westerlund, 'Law and the Biosphere, or the Biosphere and Law? About the Sustainability Paradigm and Law's Problems with That' (Rätt och utveckling - Oikeus ja kehitys XII, Rättsvetenskapens dagar, Åbo Academis förlag 2010) 17, 27.

[12] ibid 26.

[13] Cf. Carol M. Rose, 'Environmental Law Grows Up (More or Less), and What Science Can Do to Help' (2005) 9(2) Lewis & Clark Law Review 273.

the benefit of legal scholarship is that ecology cannot be reduced to Newtonian mechanics or to hydrodynamics, for example. The theoretical foundation of ecology has until recently been more empirical than conjectural. This means that drafting regulations based on the results of ecology is a much more complex and contingent undertaking than implementing the results of, say, mechanics.[14] The answers ecology may give differs in important respects from the answers supplied by pure—i.e. less applied—fields of science. Accordingly, legal scholars should proceed with caution each time they see ecology used as extrajudicial material for judicial decision-making. Nonetheless, ecology is used, with or without constraint—a situation demanding further investigation and analysis.

Let us now take a closer look at a piece of regulation in which the results of ecology play a significant role. Before focusing on practical problems that have occured, let us briefly survey how the problem can be handled theoretically.

In Lena Wahlberg's analysis of the problems environmental law confronts when trying to draw on scientific information, she divided the challenges into several

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[14] Olli Malve, *Water quality prediction for river basin management* (Teknillinen korkeakoulu 2007) <http://lib.tkk.fi/Diss/2007/isbn9789512287505> accessed 18 February 2014, 23–4. E.g. the determination, calibration and validation of models used in ecology is affected by a rather large number of factors. This is not the case in less applied fields of science which do not aim to tackle problems like eutrophication or other water pollution.

categories.[15] One of the most crucial differences between legal scholars and scientists is the conception of causality they use: legally relevant relations pertain between legally relevant causes and legally relevant effects irrespective of whether these are scientifically relevant.[16] This point is by no means a new one: legally relevant causation or a legally relevant standard of proof has long been known to differ from scientific causation.[17] The important point regarding the use of ecology as a tool for regulation is the difficulty produced by the very framing of the question in law—and this can be seen as the root of the problem. According to Wahlberg, what makes matters so difficult is that legal scholars or lawyers responsible for drafting regulations ask different questions than those posed by the relevant scientists in the course of their studies,[18] a conceptual and disciplinary gap implying that the findings needed might not even exist in the terms in which they are sought.[19]

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[15] Lena Wahlberg, *Legal Questions and Scientific Answers: Ontological Differences and Epistemic Gaps in the Assessment of Causal Relations* (Lund University 2010), cf. Tarlock, 'Is There a There There in Environmental Law?' (n 1) 253.

[16] Wahlberg, *Legal Questions and Scientific Answers* (n 15) 27.

[17] ibid 15, esp. references in fn 8; also 130.

[18] Ibid 16.

[19] Interestingly, originally adaptive management—the regulative approach in which the WFD also belongs—was meant to form an active template from which not only managers but also science itself could learn lessons: C. S. Holling (ed), *Adaptive Environmental Assessment and Management* (Wiley, 1978). Had the regulators

The manner in which scientific information could help in forming legally relevant causation can be divided into two steps. First, an association should be established between scientific kinds of entity that are instantiated by a certain legally interesting behavior and the damage in question.[20] For example an action—e.g. the use of pesticides—might have been taken into the sphere of regulation since the behaviour is generally associated with harmful effects—irrespective of whether those effects have taken place in a specific case.[21] Secondly, a legally relevant relation should be established between instances of these scientific kinds.[22] In this case, particular behaviour and particular damage are placed under scrutiny.[23]

Bearing in mind that several actions and forms of damage that may be of interest to legal scholars remain rather uninspiring for scientists, achieving the first step is not necessarily as straightforward as it sounds. The phrase 'scientific kinds of

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succeeded in that, this specific problem might have been solved. Unfortunately adaptive management is nowadays mostly utilised in its 'passive' form, not that focused on enhancing also the science upon which it relies: Cameron Holley and Darren Sinclair, 'Collaborative Governance and Adaptive Management: (Mis)applications to Groundwater, Salinity and Run-Off' (2011) 14(1) The Australasian Journal of Natural Resources Law and Policy 37.

[20] Wahlberg, *Legal Questions and Scientific Answers* (n 15) 157.

[21] Ibid 69–70.

[22] Ibid 157.

[23] Ibid 167ff.

entity' poses another challenge: the way behavior is isolated and defined in scientific research does not automatically equate with the behaviors of interest to draftsmen, practicing lawyers or legal scholars.

2.3 Ecological Knowledge in the WFD—When the Normative and the Factual Mingle

As noted above, in its generally accepted definition, ecology is an interdisciplinary branch of biology studying the relations between natural organisms and the relations between them and their natural environment. Ecology brings us, therefore, quite naturally to considerations of 'ecological sustainability'—if the lack of eco-sustainability that plagues environmental law is to be solved, how do we specify what we actually mean by the term 'ecological sustainability'?

A practical example will serve to illustrate the problem deriving from ecology as a field of science. The recently widely examined European Water Framework Directive (WFD[24]) is a useful heuristic device, since the WFD draws in particular upon ecological knowledge. In the WFD generally the aim is that all water bodies should attain good ecological status. This environmental object is somewhat exhaustively defined in the directive, especially in its annexes.[25]

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[24] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for community action in the field of water policy.

[25] The environmental objectives of the WFD are written down in Article 4 while the various statuses, including the ecological, are defined in Article 2.

As a directive the WFD has not gone without challenge: feedback has been given on the directive from the EU member states and from environmental law scholars for a variety of reasons. One particularly relevant criticism is that made by Josefsson and Baaner.[26] According to them, the WFD does not make the best use of ecological or of biological knowledge. The ecological status of a water body is defined with biological 'quality elements', which are classified by scientists at the EU level and in the Member States. 'Quality elements' are items of fauna or flora either found or not found in the water body.[27] The point of the criticism is that, when gauging the 'good ecological status' of waters, these are secondary features. 'Good ecological status' is more about structures and processes of aquatic ecosystems, rather than the presence or absence of single elements. The chosen path has led to an 'one out, all out' system which does not give the desired results.[28] Our example seems at least to indicate that scientific knowledge is not always used in the best possible way in legislative contexts—a matter we shall return to.[29] Despite this, it is common that the results of (social) sciences are used in law in order to provide important regulation.

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[26] Henrik Josefsson and Lasse Baaner, 'The Water Framework Directive—A Directive for the Twenty-First Century?' (2011) 23(3) Journal of Environmental Law 463.

[27] Ibid 470.

[28] Ibid 471, 473.

[29] Text at n 37ff and 43ff. See also fn 19 on how adaptive management was originally perceived.

In the case of the WFD, however, ecology seems to have a different role. It seems that more nuanced, normative and factual elements have become commingled. When its analyses and results are used for *establishing the norm*—i.e. for determining which water bodies reach and which do not reach 'good ecological status'—ecological knowledge has passed the point of being just a regulatory tool.

The change wrought by the WFD is particularly salient in the context of the civil law system (which is the main focus of the present analysis). In the civil law system, the understanding of judicial decision-making has long been about facts and norms: *sein* and *sollen, is* and *ought*, as distinct domains. Adjudication has been understood to act like a logical syllogism— a nearly automatic pattern in which the factual and normative follow each other until a conclusion is reached—even though that understanding has been criticised in much of the literature. [30] The criticism has concurrently stimulated a quest for a more nuanced perception of judicial decision-making. Legal theorists have—in this process— noted the insufficiency of the realms

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[30] Aulis Aarnio, *The Rational as Reasonable: A Treatise on Legal Justification* (Reidel, Dordrecht cop. 1987), 120-1; Eveline T. Feteris, 'Dialogical theory of legal discussions: Pragma-dialectical analysis and evaluation of legal argumentation' (2000) 8(2) Artificial Intelligence and Law 115, 122; Douglas Fisher, *Legal Reasoning in Environmental Law: A Study of Structure, Form and Language* (Edward Elgar Publishing Ltd. 2013) 480, 13. All start by describing the syllogism and continue to criticise it by analysing either other logical processes or argumentation models commonly employed in adjudication.

of logic and proceeded to considerations of material acceptability: the rhetorical approach also takes the context into account—the dialogical approach goes even further by accepting arguments relevant to those participating in the discussion.[31] Whereas the strict logical syllogism expresses internal justification, the latter two approaches are examples of external justification.[32]

Still, all the various ways of trying to grasp the problem have glossed over the meaning of the concepts of norms and facts while trying to explain how they interact—and in a rather persistent manner, trying to assure the reader that at the end of the day norms are superior to facts: what is normative is defined by the norms; facts are only *used* in the process, as grist to the mill. The types of facts relevant to legal decision-making can be analysed and divided, but even then facts are conceived of as something law *refers* to—at the most, the 'facts referred to in law have certain characteristics imposed by law'.[33] The scientist might be of great utility to the decision-maker, but still the roles of fact provider and decision maker remain distinct.[34]

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[31] Fisher *Legal Reasoning in Environmental Law* (n 30) 16-7.

[32] Aarnio, *The Rational as Reasonable* (n 30) 189-92; Fisher *Legal Reasoning in Environmental Law* (n 30) 17.

[33] Jerzy Wróblewski, *Meaning and truth in judicial decision* (Juridica 1979) 132.

[34] Ibid Wróblewski, *Meaning and truth in judicial decision* 113; Hans Kelsen, *Reine Rechtslehre: Einleitung in die rechtswissenschaftliche Problematik* (Reprint of 1st edn Leipzig and Vienna 1934, Scientia 1985) 35, 37-8.

However, when the WFD is brought into this conversation it appears that something might have changed. A Finnish study of the 'good ecological status' of surface waters included interviews with the officials who classify the status and evaluate the waters as mandated by the WFD. According to the study, these officials had a very clear understanding that what they did was by its very nature normative.[35] Bearing in mind that the officials are not lawyers but scientists, this internalised understanding of theirs does not comply with the dominant theoretical understanding of judicial decision-making—nor of the dominant understanding of the relationship between facts and norms.

It seems that with the WFD the factual and the normative have become commingled in a novel manner. Whether the environmental objective of 'good ecological status' is a technical provision or a legal norm[36], the way in which

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[35] Jussi Kauppila, 'Pintaveden normatiivinen tila' (2000) <http://www.edilex.fi/lakikirjasto/8600.pdf;> accessed 18 April 2014. According to Kauppila there are at least three categories of officials relevant in the classifying process: officials representing the regional authorities, officials from central administration and scientists developing the classificatory mechanism in general. ibid 37, fn 147.

[36] Andrea M. Keessen and others, 'European River Basin Districts: Are They Swimming in the Same Implementation Pool?' (2010) 22(2) Journal of Environmental Law 197. To answer this question – whether environmental objects in the WFD are obligations of result or obligations of best effort – is simultaneously to answer the

ecological information is *used* in the directive differs from what we have witnessed hitherto. In the WFD, scientific information is not merely used as a tool to define which norms should apply or how those norms should apply. Instead of using the 'non-legal information' in a traditional way, *the normative in the WFD is formed while the necessary scientific information is gathered*. This is what has changed with the WFD: the normative and the factual no longer merely interact, they have become commingled. Scientific information provided by the experts is no longer used for the judicial decision but rather the judicial decision is made in effect *before* the factual is brought to bear on the normative for interpretation.[37] This is because the status analyses leave little if no room for the permit-granting authorities in their work: the quality of waters or the status of a waterbody must not be deteriorated. The worst case scenario is that if the status of one quality element among others deteriorates from 'good' to 'poor', additional emissions to the concerned waterbody should be

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question whether the WFD in general has any normative weight or not. Opinion of AG Jääskinen in Case C-461/13 (ECLI:EU:C:2014:2324, 23.10.2014) elucidates the dilemma, see text at fn (40).

[37] Regarding Finland, it seems that the Supreme Administrative Court in Finland has approved this mingling: When the Court in its reasoning refers to the water management plans it proceeds without trying to separate the factual elements from the normative ones: Jussi Kauppila. 'Vesienhoitosuunnitelma ja lupaharkinta. Osa 1: Lähtökohtia vedenlaatunormin muodostumiselle' (2014) 35(1) Ympäristöjuridiikka 47, 60, 51.

prohibited—meaning that no undertaking posing that risk could be allowed. Hence discretion concerning whether to allow a novel enterprise is conducted at the management planning level by scientists—long before permissions are either applied or reasoned about by officials.[38]

What makes our example less clear is that, in the application of the WFD, the decisions made are not in every respect judicial decisions. Judicial decisions are commonly defined as decisions in individual cases, where general norms are applied in a particular situation.[39] When 'good ecological status' is classified, or waters are evaluated, the activity in question is not about solving an individual case. However, this does not mean that the evaluation of water bodies in particular could never have effects similar to solving a case. This is especially so if the ECJ ends up confirming the opinion of AG Jääskinen on how to interpret the concept 'deterioration of the quality status'. According to AG Jääskinen, the prohibition of deterioration binds the Member States in the permitting procedures of individual undertakings and that deterioration

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[38] The European Court of Justice is just about to take a stance on how the Article 4(1)(a)(i) of the WFD should accurately be interpreted in this respect: whether the prohibition of deterioration is directed at the status of the waterbody in general, the status of one quality element among others—or whether quality statuses are only statements of an objective for management planning (in programmes of measures compiled according to Art. 11 of the WFD): See request for a preliminary ruling by Bund für Umwelt und Naturschutz Deutschland, C-461/13.

[39] Aarnio, *The Rational as Reasonable* (n 30) 62.

of one status element is enough—even irrespective of whether that deterioration would affect the classification of the water body.[40]

2.4 Legal ecology: putting decision-making back into judicial decision-making

Where does all this lead us? Study of the WFD reveals that as a tool for judicial decision-making ecological knowledge does not provide an easy match. The root of the problem may lie either in the way ecology as a field of science is currently practised or in the misinterpreted manner in which it has been put to use in the WFD.[41] For the purposes of this article, however, the WFD provides an opportunity to learn a number of good lessons.

The example of the WFD shows that scientific knowledge is currently used in a way which does not fit so well into the theoretical frameworks of civil law judicial decision-making. The attempt in the WFD—managing water quality in the Member States with the help of vast amount of facts and leaving the norms themselves rather

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[40] The Opinion of AG Jääskinen in Case C-461/13 (ECLI: EU:C:2014:2324, 23.10.2014), at [84] and at [109]. See also Case C-43/10 *Nomarchiaki Aftodioikisi Aitoloakarnanias and Others* (EU:C:2011:651), Opinion of AG Kokott in which AG Kokott stated that Article 4 may under certain conditions concern also specific projects, at [62].

[41] Josefsson & Baaner, 'The Water Framework Directive—A Directive for the Twenty-First Century' (n 26) 471, 473.

flexible—has not been completely successful. What the WFD and studies on using ecological knowledge in the field of law teach us is that if we *in effect* outsource judicial decision-making from individual permitting processes to the management planning stage—including purely scientific analysis—then that poses a real risk whose consequences are not to be underestimated.[42]

How then might these decisively important problems be solved? Could the fuzzy divide between facts and norms be dissolved in a controlled manner in order better to meet the challenges of the current situation, identified in legal and legislative practice, and challenging the settled assumptions of much environmental law scholarship? To answer these questions we first need to realise that the WFD example reveals that what has traditionally been seen as the work of legal experts has swung in favor of the scientists, in so far as ecology is a field of science. The end result is that the normative is predetermined by the scientists, leaving the lawyers and judges with immutable boundaries. This is not due to the wording of the WFD but because the operative priority—in effect—granted to management planning leaves little—or no—room for the relevant permission-granting authority to form an opinion of its own.

We also need to realise that the normative part of the evaluation conducted according to the WFD is actually nothing new. When scientists evaluate data and

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[42] See text at fn (40) on the Case C-461/13. If the ECJ rules the case according to the Opinion of AG Jääskinen, then the classification conducted by a group of scientists will in effect have decided future procedures before they were even presented.

classify the quality of a water body according to an evaluation prescribed by the WFD, in addition to the scientific work involved, scientists do indeed evaluate water quality in a normative sense.[43] Traditionally, the interpretation of raw data has been the work of legal experts and ultimately this has meant giving expression to a *value-based assessment* because some values are deemed important enough to be protected by a legal system, others not. This is why the implementation of the WFD presents such a challenge for law: what has previously been done and what could be done within law is now done within the field of ecology.

The solution proposed here for this dilemma is to bring the normative decision-making back within the judicial realm by applying the results of theoretical studies which take account of values. Acccordingly, a key to solving the problem is realising that the problem lies not in ecological knowledge or in the structure of the WFD but in the fact that *the value-based decisions required when using ecological knowledge could also be made within the field of law*. Outsourcing normative decisions, as it were, to the scientists is not the only option. There is a case for expanding the zone of focus by turning to the objectives or values motivating environmental regulation.

2.5 Compatibility with other more or less critical studies

[43] This was the point noted in the above-mentioned study by Kauppila, 'Pintaveden normatiivinen tila'—see text relating to n 35.

Having seen how ecology as a field of science sets challenges for environmental law scholarship and traditional understandings of judicial decision-making, let us take a closer look at legal ecology as a methodological approach. Here legal ecology is compared with law and economics—the other method of law that openly expresses its dependence on a non-legal field of science. The aim of this exercise is to clarify what legal ecology means as a methodological choice.[44]

Even though law and economics is relatively mainstream in common law countries, especially in North America, it has also been used elsewhere. Briefly stated, in law and economics, law's economic effects are taken into consideration in the interpretation of the law—this is why it can lay claim to being called a pragmatic approach to law.[45]

In law and economics, legal systems are studied like any other system subjected to economic analysis: the legal system is seen as a network where legal

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[44] Another baseline could be different critical approaches to law: critical legal studies (CLS), critical legal positivism—or more specific critical studies, feminist legal theory and so forth. What unites these is their relation with legal positivism: to some extent legal positivism does not answer the questions that are brought up in the reality referred to.

[45] Raimo Siltala, *Law, Truth and Reason: a Treatise on Legal Argumentation* (Springer 2011) 109–112.

certainty, court rulings and other legal procedures form a market.[46] This market is studied with the help of economics. Just how teleological this basis for study is or what its aims are is not postulated as a starting point, though as a result of applying law and economics, economic efficiency invariably becomes the decisive factor in judicial decision-making.[47]

What both legal ecology and law and economics have in common is the pragmatist's view on legal studies: the effectiveness or usefulness of law is paramount, metaphysical aspirations are put to one side.[48] Further analogies from

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[46] Richard A. Posner, *Economic Analysis of Law* (Volume 3. ed, Little, Brown & Company 1986), 20–22.

[47] Siltala, *Law, Truth and Reason* (n 45) 109-12, in which Siltala is rather critical towards the postulates chosen in law and economics. Siltala's critique concerns the lack of institutional support provided to those facing the economic consequences of law: ibid 112. Like Dworkin, Siltala asks why economic efficiency in particular should be given priority in legal interpretation: see Ronald Dworkin, *A Matter of Principle* (Harvard University Press 1985) 266ff. Also e.g. S. A. Shapiro and C. H. Schroeder, 'Beyond cost-benefit analysis: A pragmatic reorientation' (2008) 32 Harvard Environmental Law Review 433, 439–40. and Douglas A. Kysar, *Regulating from nowhere: environmental law and the search for objectivity* (Yale University Press 2010) have provided further critique, especially on the usage of cost-benefit analysis in environmental policy-making.

[48] Siltala, *Law, Truth and Reason* (n 45) 98.

law and economics to legal ecology do not appear feasible however. Legal order is not a workable object for ecological research—legal order does not form an ecological system for study. In legal ecology, *the results of ecology* are applied or—as discussed above—judicial decision-making occurs when/where the results of ecological investigation are gathered. As a gross simplification it might be said that some end results of legal actions are seen as more desirable than others and that this is more openly expressed in legal ecology than a comparable result might be in law and economics.[49]

Accordingly, legal ecology is drawn further away from law and economics and closer to critical studies of law: critical legal studies (CLS), feminist legal theory and so forth.[50] Critical studies share the (howsoever constituted) outsider's view on the current hegemonic view amongst legal scholars—whatever that current hegemony might be—and aim to unveil the consequences for the legal system of the *status quo*.[51] The willingness to unveil consequences is what unifies legal ecology with critical approaches and distances it from law and economics: the critical approaches and legal ecology openly favor certain consequences, while law and economics—by

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[49] For how this is done in legal ecology, see text at n 72ff.

[50] On the variety of approaches see Deborah Z. Cass, 'Navigating the Newstream: Recent Critical Scholarship in International Law' in Nordic Journal of International Law (1996) 341.

[51] Jarna Petman, 'Human Rights and Violence: The Hope and the Fear of the Liberal World' in (University of Helsinki 2012), 5.

applying the standard methods of economics to the legal system—focuses on the system itself and lays claim to lack of bias concerning outcomes.

However, a critical approach is not a methodological approach as such. It does not answer the question of *how* studies on law should be conducted or legal decisions made. Notwithstanding this key distinction between critical approaches and legal ecology, legal ecology can be described as a critical approach to law. We shall return to the matter of how this characterisation of legal ecology affects its deployment and how it is institutionalised below.[52]

3 TAKING AIMS SERIOUSLY

Even if the way in which ecological knowledge is currently used in regulation were rather flawed, the challenges would remain the same. It could be said that the aim of the environmental regulation—reducing pollution, enhancing water quality and so forth—is evident even though the means to the end have been of dubious merit. If the aims are clear but their fulfillment is lacking, what might be done? Might there be better measures available? Answering these questions brings us to the core concern of legal ecology as a methodology: how might the lack of eco-sustainability be incorporated into the legal argumentation? What would to the implications be for environmental judicial decision-making? The answers might not be that far away after all.

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[52] On choosing the end result and how it responds to teleology, see text at n 57ff.

3.1 Ready! —the aim-setting sections as filters

It is common that in legal texts in the field of environmental law the relevant piece of legislation starts by setting the aim. This has been a growing tendency in recent years: most new environmental statutes start with a paragraph setting out the aim of the legislative action.[53] The difference between these aims and the aims of a

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[53] For Finnish examples, see Environmental Protection Act (2000/86) Chapter 1, Section 1 <http://www.finlex.fi/en/laki/kaannokset/2000/en20000086.pdf>, Nature Conservation Act (1996/1096), Chapter 1, Section 1 <http://www.finlex.fi/en/laki/kaannokset/1996/en19961096.pdf> or Waste Act (646/2011) Chapter 1 Section 1 (translation is available only for the previous Act (1072/1993) but the aim-setting sections are essentially the same <http://www.finlex.fi/fi/laki/kaannokset/1993/en19931072.pdf>. The same applies for the Environmental Protection Act: it was repealed with replacement in 2014 (527/2014, http://www.finlex.fi/fi/laki/alkup/2014/20140527), the translation is not yet available but the aim-setting sections have not essentially changed. A similar legislative tradition is to be found in other civil law countries, see for example the Swedish Environmental Code (1998:808) Part 1, Chapter 1, Section 1 <http://www.sweden.gov.se/content/1/c6/02/28/47/385ef12a.pdf> or South African National Environment Management: Air Quality Act 39 Of 2004, Chapter 1, Section 2

directive—or a framework directive—is crucial in the sense that when included in the text of a statute the aim *should* be given higher normative status than should the preamble to a directive. These sections are referred to here as *the aim-setting sections*.

Despite their importance, these aim-setting sections are more or less neglected: a good example of which is the practice in Finland. In Finland, the aim-setting sections have been part of environmental legislation for as long as it has existed as a separate field. Owing to their complexity, such sections have been nicknamed 'birdsong sections'—birdsong referring on the one hand to all that is virtuous and beautifully written in the sections and on the other to their unbearable normative lightness.[54] The nickname as such reveals enough about the difficulties such sections have caused. In the civil law context, the text of the statute has considerable significance when defining the norm the legislator has sought to lay

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<http://www.capetown.gov.za/en/EnvironmentalResourceManagement/publications/Documents/NEM_AirQualityMngtAct.pdf>. All accessed 18 February 2014.

[54] *Linnunlaulupykälät* or 'birdsong sections' as a part of jargon of environmental law practitioners was first mentioned in the literature in 1998, Tapio Määttä 'Lainsäätäjän kunnioittamisasenne, tavoitteellinen laintulkinta ja lakien tavoitesäännökset vallitsevassa tuomarinideologiassa' in Auri Pakarinen, Anna Hyvärinen and Kaijus Ervasti (eds), *Lainvalmistelu, tutkimus, yhteiskunta: Jyrki Talan juhlakirja* (Turun yliopiston oikeustieteellisen tiedekunnan julkaisuja n:o 23, Turun yliopisto 2011) 215.

down, but when the text is descriptive, setting high aims promising practically everything, the individual faced with interpreting such a plethora of detail might be excused for their state of confusion.[55]

Another reason for the confusion is that in the aim-setting sections the values motivating them are written openly: they do not look like other subsequent sections—they even have that slightly off-putting (for positivist judicial interpreters) resemblance to natural law. This sense of dissonance is understandable, but ultimately based upon a repression of the extra-legal dimensions of positivism itself. The conflict between positivism and natural law is well established, and as Bosselmann has put it, the rivalry between the two has not been a fruitful one, yet positivism is as deeply rooted in morality as natural law ever was and morality cannot be outsourced from any form of legal order.[56] In other words, it can be argued

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[55] For example, see the repealed Finnish EPA 1 § (n 46): 'The objective of this Act is: 1) to prevent the pollution of the environment and to repair and reduce damage caused by pollution; 2) to safeguard a healthy, pleasant and ecologically diverse and sustainable environment; 3) to prevent the generation and the harmful effects of waste; 4) to improve and integrate assessment of the impact of activities that pollute the environment; 5) to improve citizens' opportunities to influence decisions concerning the environment; 6) to promote sustainable use of natural resources; and 7) to combat climate change and otherwise support sustainable development'.

[56] Klaus Bosselmann 'Grounding the Rule of Law' (Rule of Law for Nature, Oslo, May 2012) 14, 18. In his paper Bosselmann also lists the myths included in the current

that for the positivist the extra-legal element of law is the positivism of law itself—however much they would seek to deny the charge. Accordingly, teleological aims need not amount to an inherent problem within a positivist tradition of judicial interpretation.

According to Määttä, the Supreme Administrative Court of Finland (SAC), when dealing with the aim-setting sections, uses teleological arguments in various ways.[57] Most commonly, the SAC does not refer to the aim-setting sections at all. Nonetheless, there are cases in which the SAC has referred to the sections, and in some cases the sections have even held the balance of power in the argumentation as a whole. Of all the environmental cases the SAC decides annually these few form a tiny fraction, but in relation to the argument for giving insufficient eco-sustainability more influence in judicial decision making, this fraction is significant.[58] This is

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legal order calling itself positivist. Unveiling the myths—for example the one of the invisible hand, or of unlimited resources or of rational behaviour—highlights how positivism cannot escape moral choices. Ibid 19–20.

[57] Here 'teleological argumentation' is used to mean different forms of argumentation focusing on the aims of the legislator, the final outcome of the decision and so forth.

[58] As examples of cases meant here, see KHO 2010:6 <http://www.kho.fi/paatokset/49797.htm> accessed 18 February 2014 or KHO 2008:66 <http://www.kho.fi/paatokset/44312.htm> accessed 18 February 2014.

because the cases show that using the aim-setting sections in judicial decision-making is *possible*. It just happens not to be common.

The way the SAC has used the aim-setting sections is familiar from teleological argumentation.[59] If the norms themselves do not offer a clear solution, the aim-setting sections are used to *balance* between the norms. The legal ecology viewpoint takes this technique and presents the possibility of its extension: if aim-setting sections can be used to solve the hard cases, could this practise be extended to cover cases where ecological knowledge is at issue? This is a question to which we will return.

3.2 Steady! —aims as principles

[59] One conclusion of Määttä's article was to form an anatomy of teleological argumentation. In that (1) the aim-setting sections were the first 'source' when forming teleological arguments, the others being (2) the material provided by the legislator while preparing the regulation, (3) arguments drafted from the system in which the statute belongs, (4) teleological argumentation in the meaning of the political aims of the regulation and, as the last and least significant option, (5) argumentation focusing on the consequences of the decision. The anatomy is to some extent hierarchical, with the most approved sources for decision-makers at the top. See Määttä 'Lainsäätäjän kunnioittamisasenne, tavoitteellinen laintulkinta ja lakien tavoitesäännökset vallitsevassa tuomarinideologiassa' (n 54) 219.

When thinking of the normative balancing of principles, the first scholar to come to mind is to the late Ronald Dworkin and particularly his writings on rights. For Dworkin, rights are something individuals have as a protection from the state's intrusive actions: maximal fulfillment of rights is the means by which an individual survives under the governance of the coercive state actor.[60] Needless to say, Dworkin has studied the issue of rights in the American context of liberal democracy—but his theoretical approach and jurisprudential insights are still useful for a reflection upon the broader questions of balancing. Indeed, in response to the confusing diversity of environmental legal norms, recourse to Dworkin's theory is nothing new: within international environmental law, modifications of Dworkin's theory have been numerous. Worth mentioning here are the approaches presented by Ebbesson, Verschuuren, de Sadeleer and Beyerlin, who all wrestle with the problem of principles and normativity.

Verschuuren holds that no firm line between rules and principles can be drawn. They both range from abstract to concrete; principles form a link between moral objectives such as the lack of eco-sustainability and normatively binding rules.[61] De Sadeleer has developed an intermediate category weakening the

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[60] Ronald Dworkin, *Taking Rights Seriously* (New impr. corr. with appendix: a reply to critics. edn Duckworth 1978) 185ff, 267ff.

[61] Jonathan Verschuuren, *Principles of Environmental Law: The Ideal of Sustainable Development and the Role of Principles of International, European, and National Environmental Law* (Nomos-Verl.-Ges 2003) 38, 43. Verschuuren lists nine functions

dichotomy between norms and principles: a category 'of rules of an indeterminate nature, which may be set against rules of complete and precise content'.[62] He reckons the principles in environmental law to be so strong that they are more normative than principles in the Dworkinian sense.[63] Ebbesson has suggested an alternative trichotomy replacing the one offered by Dworkin. His structure consists of (a) 'balancing norms', (b) 'goal oriented norms' and (c) 'fixed norms'—reconstructing the dichotomy in the footsteps of Aarnio.[64] Finally, Beyerlin, while trying to 'haul them [environmental principles: e.g. precaution, polluter pays, or sustainable development] out of the sphere of twilight', ends up with the conclusion that whether norms are rules, principles or policies is ultimately irrelevant: of pivotal relevance is the

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that principles have in the legal order—each representing the idea of principles and rules laying at the respective ends of the same sliding scale, ibid 49–50.

[62] Nicolas de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (Susan Leubuscher tr, Oxford University Press 2002) 308–9.

[63] Ibid 308.

[64] Jonas Ebbesson, *Compatibility of International and National Environmental Law* (Iustus förlag 1996) 86–91; Aulis Aarnio 'Taking Rules Seriously' (Archiv für Rechts- und Sozialphilosophie, Beiheft 42 1990) in which Aarnio reconstructed the dichotomy between norms and principles.

capacity the norms have to guide decisions, interpretations or applications of existing rules.[65]

3.2.1 Principles, aims, policies, goals… what else is there?

All the above-mentioned scholars have made significant strides in our understanding of the nature of environmental legal principles. But since in the present article the aim-setting sections—seen as that part of the legal order in which the principles are filtered and sorted—are central to our concerns, the focus here will be placed less on defining whether the aim-setting sections are principles, rules or something in between, and more on solving how Dworkin and his followers' theories could help in the application of the aim-setting sections. That application, then again, ought to reveal the value choices that are currently left tacit in, for example, the ecological analyses conducted according to the WFD.

Legal principles as Dworkin presented them are separated from rules by the dimension of weighing and balancing.[66] Principles, then again, can be distinguished

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[65] Ulrich Beyerlin in 'Different Types of Norms in International Environmental Law: Policies, Principles, and Rules' Jutta Brunnée, Daniel Bodansky and Ellen Hey, *The Oxford Handbook of International Environmental Law* (Oxford University Press 2007) 426, 446–47.

[66] Dworkin, *Taking Rights Seriously* (n 60) 24–27.

from goals: a goal is a political aim not yet separated and singled out.[67] And, most importantly: principles describe rights, policies describe goals—rights are the rights of an individual, while goals are more collective in nature. [68] Rights can be either abstract or concrete, the former lacking any indication of how they might be balanced with other rights, the latter being more precisely defined and more readily applicable when seeking a definitive solution.

The key question for present purposes is whether the aim-setting sections could be seen as Dworkinian principles. They do share some qualities Dworkin added to principles: they are individualised, setting an aim distinguishable from a general political aim by reason of being more defined. Whether the aim-setting sections are specific enough to be used for weighing and balancing is less clear. In most cases, the aims are specified in several sub-sections, written with more precision than the principles in common use. The aim-setting sections do have one quality that principles in general do not have (or even need to have): they are institutionalised, indeed to a rather high level in the legislative hierarchy. Emphasising this would bring joy even to positivists: indeed Kelsen, Aarnio and the others are the reason why this neglect of the aim-setting sections became a problem in the first place.[69]

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[67] And furthermore, a political aim is a 'generic political justification' and a political right 'an individuated political aim'. Ibid 91.

[68] Ibid 90.

[69] Aarnio, *The Rational as Reasonable* (n 30), Kelsen, *Reine Rechtslehre* (n 34).

As stated, Dworkin uses rights and principles to guard the individual's sphere of freedom from state intervention. The idea of a small-scale government fits poorly with the reality of environmental legislation, which is justified by recourse to more sceptical (or realistic, depending on the point of view) political theory.[70] Environmental regulation works from quite a different viewpoint to society than Dworkin had in mind when writing about principles—Hobbesian command and control regulation is not what a liberal would choose.

Nonetheless, the aim-setting sections used in the environmental legislation do bear resemblance to Dworkinian principles. Moreover, this should not really be a surprise. Dworkin developed the theory of principles to safeguard fully the individual in situations where rules had failed in that task.[71] Similarly, the aim-setting sections can be used to comply fully with the values motivating the statute: if the application of rules fails to fulfill the objective stipulated in the aim-setting sections, using these

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[70] The bulk of environmental regulation can be said to be Hobbesian in that it is based on a conception of egocentric actors pursuing only their own interest and disregarding others. The state is needed to hinder such behavior with restrictive regulation. In other words, the more optimistic view the scholar has of self-regulation of actors, the more willing they seem to be to limit the restrictive actions of a state. For an example, see David B. Spence, 'Paradox Lost: Logic, Morality, and the Foundations of Environmental Law in the 21st Century' (1995) Columbia Journal of Environmental Law 20(1) 145.

[71] Dworkin, *Taking Rights Seriously* (n 60) xi–xii, 184ff.

sections as if they were principles could bring the expressed objectives closer. Thus the analogy between principles and the aim-setting statutes could be defended and legal ecology would have a readily adaptable template to employ.

3.2.2 The recipe: phase to phase

Even though Dworkin's theory is widely circulated amongst environmental legal scholars it is surprising how little traction Alexy's work has gained. Alexy is the scholar whose writings best complement Dworkin's work. For example, the usage of principles is quite commonly criticised for a lack of precision: it is even claimed that the relevant weighing and balancing is irrational activity—deliberations lacking rational standards of application.[72] Alexy reckons this argumentation-theoretical criticism to be most important critique of the principles theory. For Alexy, who modifies the principles theory, the balancing of principles is neither decisive nor subjective.[73] According to Alexy, the difference between the application of rules and

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[72] Jürgen Habermas, *Between facts and norms: contributions to a discourse theory of law and democracy* (Polity Press 1996) 259.

[73] According to Alexy, there are three aspects in his theory which defend its rationality: the pareto-optimality of balancing, the Law of Balancing (i.e. '*The greater the degree of non-satisfaction of, or detriment to, one principle, the greater the importance of satisfying the other.*') and the Weight Formula. See Robert Alexy, *A Theory of Constitutional Rights* (Julian Rivers tr, Oxford University Press 2002) 67–9

principles is a function of their intrinsic nature. While rules are definite, principles form *prima facie* requirements: they ought to be fullfilled to the greatest extent that is legally and factually possible. Principles themselves do not solve the dilemma of how the relation between reason and counter-reason—one principle and a competing principle—should be decided.[74]

Alexy offers a more nuanced structure for the weighing and balancing of principles. According to him, when it comes to competing principles, cases can be resolved with step-by-step logical reasoning similar to the application of rules. Principles produce an optimisation requirement, which should be applied rigorously.[75] To extend this very procedure to the application of the aim-setting sections leads to the improvement legal ecology approach might present: writing out this step-by-step logical reasoning equates with open-ended argumentation and transparent lines of thought.

According to Alexy, applying various principles results in rule-like rulings: the Law of Competing Principles is a rule which mends the case of competing principles: '*the circumstances* under which one principle takes precedence over another *constitute the conditions of a rule* which has the same legal consequences as the

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and 102, respectively. And on an evaluation of the criticism of these, see Robert Alexy, 'Legal Rules, Legal Principles and the Construction of Constitutional Rights' (Tampere, Helsinki 8.-10.2.2010 2010) 7.

[74] Alexy, *A Theory of Constitutional Rights* (n 73) 47, 57.

[75] Ibid 52.

principle taking precedence'.[76] In other words, after principles have been optimised and a conclusion reached, this conclusion forms a rule according to which the case must be solved. The circumstances include both the rules and principles significant for the ruling: the circumstances form a network of arguments from which the ruling is reasoned.[77] Nevertheless, emphasising circumstances does not, in Alexy's view, lead to *ad hoc* decisions. The interpretation-theoretical criticism is based on the assumption that the systematic and hierarchical structures of principles and rules would not withstand the act of balancing.[78] However, if the Weight Formula—a formula for showing how the rationality of balancing occurs—is fully considered, it is seen that the specific weight of a principle is a relative concept. It relates to competing principles and to the intensity of interference with them. The balancing is,

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[76] Ibid 54 (emphasis added). There are naturally other ways to criticize and nuance Dworkin's clear separation between principles and rules. E.g. according to Aarnio, rules and principles form a cline that can be divided in four: 'rules proper', 'rule-like principles', 'principle-like-rules' and 'principles proper', see Aarnio, *Taking Rules Seriously* (n 64) 184. He also gives examples of positive legal principles, dividing them into 'formally valid principles', 'legal generalizations', 'decision-making principles' and 'extrasystemic principles', Aarnio, *Taking Rules Seriously* (n 64) 183–84.

[77] Professor Raimo Siltala helped to form this clarification. The structure exists because judges must reach a verdict; the case cannot be left unsolved.

[78] Alexy 'Legal Rules, Legal Principles and the Construction of Constitutional Rights' (n 73) 6–7.

in other words, a formal structure without intrinsic substance: it could be called the Epistemic Law of Balancing.[79] This structure leads to a situation where the usage of principles affects the circumstances of subsequent rulings: the rulings given have an impact on the later decision-making situations. The network is rooted in time in much the same way as preliminary rulings are in common-law cultures. Often arguments *underlying* the weighing and balancing—i.e. the rules according to which arguments are chosen to be balanced—are left unseen. Feteris has presented an elegant reconstruction through which such goals of legal system can be made explicit.[80] In legal ecology the aim-setting sections serve as authoritative legal decisions expressing these system-goals.[81]

Discussion of principles is nothing new, and principles in a broad sense are widely invoked in the field of environmental law. What does it bring about when the

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[79] The Weight Formula is the second law regarding balancing, the first being the (Substantive) Law of Balancing which states 'The greater the degree of non-satisfaction of, or detriment to, one right or principle, the greater must be the importance of satisfying the other.' Alexy, *A Theory of Constitutional Rights* (n 73) 102, Robert Alexy 'On Balancing and Subsumption. A Structural Comparison' (2003) 16(4) Ratio Juris 433, 446.

[80] Eveline T. Feteris, 'The Rational Reconstruction of Weighing and Balancing on the Basis of Teleological-Evaluative Considerations in the Justification of Judicial Decisions' (2008) 21 Ratio Juris 481, 498-92.

[81] See text at fn (53)ff and (83)ff.

aim-setting sections are employed like legal principles? An illustrative answer is given below: the interpretation of the concept of pollution in the Finnish Environmental Protection Act (EPA[82])—the implementing decree of the Intergrated Emissions Directive (IED)[83]—is reframed with reference to legal ecology.

3.3 Go! —legal ecology at work

The most notable difference between principles in environmental law and the aim-setting sections hinge upon the institutionalised position and the greater precision of the latter. When the aim-setting sections are adopted into law they are written in a more detailed manner than the general environmental principles usually are—if the latter have been codified in the first place. For example, the aim-setting section of Finnish EPA is divided into seven paragraphs, each defining which parts of eco-sustainability ought to be considered: the aims are preventing pollution, repairing

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[82] Repealed Environmental Protection Act 3.1.1 § (2000/86) is available in English <http://www.finlex.fi/en/laki/kaannokset/2000/en20000086.pdf>, unfortunately its replacement from 2014 has not yet been officially translated (527/2014, http://www.finlex.fi/fi/laki/alkup/2014/20140527) (n 46). The concept of pollution has remained practically intact.

[83] Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) OJ L 334, 17.12.2010, p. 17–119.

possible damage, safeguarding a healthy environment, integrating impact assessments of polluting activities and so forth.[84] When compared with more general environmental principles, it can be seen that in the aim-setting sections the principles are sorted, objectives filtered and aims specified in greater detail.

The concepts of pollution and of emission were given an EU-wide definition with the IPPC Directive back in 1996.[85] According to the definition, '"pollution" means the direct or indirect introduction, as a result of human activity, of substances… into…water or land which may be harmful to…the quality of the environment…'.[86] The

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[84] Environmental Protection Act (86/2000) 1 §, sub-section 1). <http://www.finlex.fi/en/laki/kaannokset/2000/en20000086.pdf> accessed 18 February 2014.

[85] Directive 2008/1/EC Of The European Parliament and Of The Council Of 15 January 2008 Concerning Integrated Pollution Prevention And Control – definitions are at Article 2(2) and 2(5). The definitions have remained practically the same also when the IED Directive replaced the IPPC at 2014, see Directive 2010/75/EU Of The European Parliament And Of The Council Of 24 November 2010 On Industrial Emissions (Integrated Pollution Prevention And Control), Articles 3(2) and 3(4).

[86] Ibid, IED Directive Articles 3(2) and 3(4).

definition has been transposed into Finnish legislation as is, except for insignificant modifications.[87]

This definition has been one of the core issues in cases concerning permissions for peat production. In this form of local energy production conducted in Finland, peat is excavated out of mire and burned to produce energy. Excavating peat causes pollution to nearby waters and on downstream waters and land mainly via the run-off waters containing humus, an organic matter. Once the mire is opened and the peat excavated, the mire will become swampy once more in 5,000–10,000 years. Peat production is regulated by environmental permits granted according to the EPA and lower regulations based on it.[88]

The SAC has adopted a stance in which the environmental harm that the production causes to the mire itself cannot be considered to be pollution in the sense of either the IPPC/IED Directive or the EPA.[89] In these rulings, the court states that

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[87] Environmental Protection Act (86/2000) 3.1 §, sub-section 1). <http://www.finlex.fi/en/laki/kaannokset/2000/en20000086.pdf> accessed 18 February 2014.

[88] Permits according to the Water Act (587/2011) are usually also needed for the trenches dug through and adjacent to the production site. Water Act (587/2011) (In Finnish) <http://www.finlex.fi/fi/laki/ajantasa/2011/20110587> accessed 18 February 2014.

[89] See KHO 2005:27 <http://www.kho.fi/paatokset/31421.htm> accessed 18 February 2014.

the harm the activity causes on the activity area itself by physically changing the area without emissions elsewhere falls beyond the sphere of the IPPC or the EPA.[90] Scholars have poured scorn on the SAC for its stance, arguing that the SAC unnecessarily restricts the interpretation of the definition of pollution.[91]

Would the end result be any different if the case were to be adjudicated by deploying legal ecology? If the aims at EPA 1 § were taken seriously, the first step would be to define the relevant aims: safeguarding a healthy, pleasant and ecologically diverse and sustainable environment; promoting sustainable use of natural resources; and preventing pollution or repairing and reducing the damage it causes would seem to be the three most relevant ones.[92] On the other hand, a more

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[90] Ibid KHO 2005:27, summary.

[91] Ismo Pölönen, *Ympäristövaikutusten arviointimenettely: tutkimus YVA-menettelyn oikeudellisesta asemasta ja kehittämistarpeista ympäristöllisen vaikuttavuuden näkökulmasta* (Suomalainen lakimiesyhdistys, 2007). The work is on EIA and thus the study is mainly concerned with the problems the stance causes for the application of EIA. Interestingly, the author still reckons one problem to be that the current standing of the SAC restricts the fulfillment of the aims of the EPA. ibid 162, fn 104.

[92] EPA 1 § sub-sections 1), 2) and 6). <http://www.finlex.fi/en/laki/kaannokset/2000/en20000086.pdf> accessed 18 February 2014.

general principle can also be found based on constitutional rights: the right to earn one's livelihood by a chosen activity.[93]

After setting out the competing principles the justification of the adjudication would then proceed with the Law of Balancing and its three steps: 1) defining the detriment to the first principle, 2) defining the importance of the competing principle; 3) deciding whether the importance of satisfying the competing principle justifies the detriment to the first principle.[94] The first and second stage—the intensity of the interference and the degree of importance—would be set on a triadic scale as either light, medium or strong. The act of balancing would not be fulfilled if the Weight Formula was not applied: '[t]he more heavily an interference with a constitutional right weighs, the greater must be the certainty of its underlying premisses.'[95] In the Weight Formula, the abstract weights of competing principles or aims turn into specific or relative weights.[96] Thus in this stage of the interpretive analysis the

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[93] Constitution of Finland (731/1999) 18 §. <http://www.finlex.fi/en/laki/kaannokset/1999/en19990731.pdf> accessed 18 February 2014.

[94] Alexy, 'On Balancing and Subsumption' (n 79) 436–37. In other words the first step concerns the intensity of the interference, the second the degrees of importance and the third their relationship to each other. It makes no difference which principle is chosen to be the first, or which is the competing one.

[95] Ibid 446.

[96] Ibid 444.

dilemma is no longer one of the substantive importance of different aims but of their *relative* importance; their importance in the current circumstance when compared with other factors in the case.[97]

Applying this approach would at least mean a more thorough degree of argumentation in the cases coming before the SAC. Instead of simply extrapolating some actions from the concept of 'pollution', the SAC would be forced to contextualise the issue. Through fitting the aims in EPA 1 § and the constitutional right to earn one's living in the formal structure of the Weight Formula, the SAC would need openly to rationalise its adjudication. Would the detriment to the aim of 'safeguarding an ecologically diverse environment' be light, medium or strong? Where would the right to 'earn one's livelihood' come, using the same scale? Would its weight in the situation be enough to justify the damage caused to the first-mentioned of these aims?

We can see then how legal ecology changes the reasoning of cases. Secondly, legal ecology brings to the surface and forces the writing out of the tangible ecological situation behind every case. Even though adjudication of environmental cases has

[97] This is also the beauty of the Weight Formula: it solves the deadlocks the abstract weights (which in many cases do not differ from each other) cause and gives tools for 'realizing as much rationality in legal argumentation as possible', as Alexy puts it, Alexy 'On Balancing and Subsumption' (n 79) 433-48.

long been known for its openness to teleological argumentation,[98] in legal ecology the reality for which judicial decisions are made is already present while the legal argumentation is formed. And thirdly, with legal ecology the motivating ideas behind environmental regulation can be critically evaluated in course of legal argumentation itself and so be realised to the fullest extent in each individual circumstance.

4 CONCLUSIONS

In conclusion, it can be stated that the aim-setting sections of law ought to be taken as clarifications of broader principles in environmental law. The principles, policies or goals motivating environmental regulation are filtered and sorted in the aim-setting sections. Taking them seriously is the most efficient way to give substance to the values behind the regulation. As noted, this would also obstruct us from hiding value choices at, for example, the management planning stage where the choices are not made visible or open to (judicial) review.[99]

Secondly, it can be concluded that the aim-setting sections ought to be seen as optimisation requirements: they 'can be satisfied to various degrees, and… the

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[98] Fisher, *Legal Reasoning in Environmental Law* (n 30), 34 and 161 with an example of international environmental law conventions.

[99] See text at fn (41).

appropriate degree of satisfaction depends not only on what is factually possible but also on what is legally possible'.[100]

Thirdly, the optimisation requirement is fulfilled by the weighing and balancing of the competing values or objectives that lie behind the legislation, some of which are written down in the aim-setting sections. This weighing and balancing can be performed formally, rather like more familiar reasoning with fixed rules.[101] This approach ought to be part of all judicial decision-making with those pieces of environmental legislation presenting the possibility of it. Properly conducted weighing and balancing of values would compel logical structuring of also that part of adjudication that might even have been regarded as irrational.[102] At the law-enacting stage it brings to an end any presuppositions—were such assumptions to be made—that the scientific evaluation of data is free of value choice. It is not, as the previous example from the WFD indicates.[103]

By fulfilling these objectives, environmental judicial decision-making in civil law systems might be better placed to meet the challenges brought by the

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[100] Alexy, *A Theory of Constitutional Rights* (n 73) 47–8.

[101] The difference between the more familiar Subsumption Formula and the Weight Formula is that the former follows the rules of logic, the latter the rules of arithmetic, i.e. the first-mentioned represents a classifying dimension of legal reasoning, the last-mentioned a graduated one. Alexy, 'On Balancing and Subsumption' (n 79) 448.

[102] See text at fn (72).

[103] See text at and from fn (33).

deterioration of ecosystems. It also might be that the most efficient way to bring about a paradigmatic shift would be to argue for a change in the kind of judicial decision-making which is carried out on a daily basis.